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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,374	04/02/2001	Yuji Yamamoto	Q63838	7619

7590

12/22/2004

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,374

Applicant(s)

YAMAMOTO, YUJI

Examiner

Chat C. Do

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-5 are objected to because of the following informalities:

Re claim 1, the applicant is advised to remove the parentheses in the phrase “(n: an odd number of 3 or larger)” in line 7 in order for the examiner to consider the limitation cited inside the parentheses. In addition, the application is advised to re-write the acronym “IIR” in line 1 in full as “infinite impulse response (IIR)”. Claims 4-5 have the same objection.

Re claim 2, the applicant is advised to amend the phrase “of an is set” in lines 2-3 as “is set” for clarification.

Re claim 3, the applicant is advised to amend the phrase “a subtraction result” in line 3 as “the subtraction result” because it refers back to the result of the subtraction unit in line 2. Claim 4 has the same objection.

Re claims 4-5, the applicant is advised to either amend/cancel or point out clearly the distinguish between claims 4-5 in order to avoid claim duplication. In addition, the applicant is advised to rewrite the acronym “FM” in line 4 as “frequency modulation (FM)” for clarification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, the term "assuming" in line 2 is a relative term which renders the claim indefinite. The term "assuming" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "assuming" does not clearly require a precondition to be true, but it rather forces the precondition to be true. Claims 4-5 have the same rejection.

Thus, claims 2-3 are also rejected for being dependent on the rejected based claim 1.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasuga (U.S. 4,521,867).

Re claim 1, Kasuga discloses in Figure 1b under prior art a second-order band pass IIR (col. 1 lines 5-10) type digital filter (e.g x_n as digital signal for digital filter), wherein assuming that a sampling frequency is six times as large as a central frequency

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of a passing frequency band (e.g. set or let the carrier frequency as low as 1/6 time the frequency of sampling), a first-order input feedback coefficient b_1 is set at $-1 + 2^{-n}$ and a second-order input feedback coefficient b_2 is set at $1 - 2^{-(n-1)}$ (n : an odd number of 3 or larger) (col. 1 lines 44-47; lines 60-65 and col. 4 lines 3-7 wherein all the coefficients are less than 1 or within the circle for stabilizing filter and set b_1 in col. 4 line 6 as $-1 + 2^{-n}$ and set b_2 in col. 4 line 6 as $1 - 2^{-(n-1)}$ by manipulating the B_K, \hat{B}_{ki})).

Re claim 2, Kasuga further discloses in Figure 1b under prior art a zero-order output coefficient a_0 is set at 2^{-n} and a coefficient a_2 a second-order output is set at -2^{-n} (col. 1 lines 44-47; lines 60-65 and col. 4 lines 3-7 wherein all the coefficients are less than 1 or within the circle for stabilizing filter and set a_0 in col. 4 line 3 as 2^{-n} and set a_2 in col. 4 line 3 as $-2^{-(n)}$ by manipulating the A_K, \hat{A}_{ki})).

Re claim 3, Kasuga further discloses in Figure 1b under prior art the second-order output is subtracted from the zero-order output and a subtraction result is multiplied by 2^{-n} (see Figure 2 wherein output of second order with b_2 multiplication is subtracted and the result is multiplied by a_0 by 2^{-n}).

Re claim 4, it is a reference signal with limitations cited in claim 3. Thus, claim 4 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Re claim 5, it is a reference signal with limitations cited in claim 3. Thus, claim 5 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 5,995,565 to Tong et al. disclose a co-channel interference reduction.
- b. U.S. Patent No. 5,691,929 to Sun discloses a 90-degree phase shift network, system for controlling a 90-degree phase shift characteristics of the network, linearizer using all-pass filters, and system for controlling the linearizer.
- c. U.S. Patent No. 5,963,273 to Boie et al. disclose a circuit for carrying out digital Nyquist filtering of IF intermediate frequency signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Chat C. Do
Examiner
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December 1, 2004

A handwritten signature in black ink, appearing to read 'TODD INGBERG', with a long horizontal flourish extending to the right.

TODD INGBERG
PRIMARY EXAMINER